



TEST REPORT OF AGGREGATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID : CP-RW-2017-11-07-01 Date: 10-11-17
Customer : Assistant Executive Engineer, Yelahanka New Town Sub division,
BBMP, Bangalore.
Address : Yelahanka New Town Sub division, BBMP, Bangalore.
Project Name : Improvements to roads at Pulakeshinagara in Attur Ward no.03
Agency : Sri. H.S. Palakshamurthy, No.1, 2nd Main, B. D. A layout, Pattegere,
Palaya, Near Prashanthanagara, Bangalore.
Customer Reference : EE(YNK.D)E-PMT-04/WO/107/2017-18
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 07-11-17
Sample ID No : 2017-11-07-01/01
Type of Mix : BC(Bitumenous Concrete)
Date of test : 07-11-17

Type of Binder : 60/70
% of Binder Used : 5.0%
Weight of Aggregate : 200.0 gm
Weight of Binder : 10.0 gm
Temperature of water bath : 40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-S
1	97.5	2.5	97.8	Minimum Retained Coating 95%
2	98.0	2.0		
3	98.0	2.0		

Note:

The results pertain to the samples received and tested.
All information furnished by Customer/Representative
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Signature: R. Karthik Rechan
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Authorized Signatory
Quality Manager



TESTS RESULTS ON STABILITY OF MIX

Lab ID : CP-RW-2017-11-07-01 Date: 10-11-17
 Customer : Assistant Executive Engineer, Yelahanka New Town Sub division, BBMP, Bangalore.
 Address : Yelahanka New Town Sub division, BBMP, Bangalore.
 Project Name : Improvements to roads at Pulakeshinagara in Attur Ward no.03
 Agency : Sri. H.S. Palakshamurthy, No.1, 2nd Main, B. D. A layout, Pattegere, Palaya, Near Prashanthanagara, Bangalore.
 Customer Reference : EE(YNK.D)E-PMT-04/WO/107/2017-18
 Source of Sample : Hot Mix Plant, Bangalore
 Sample Condition : Satisfactory
 Date of Receipt : 07-11-17
 Sample ID No : 2017-11-07-01/01
 Type of Mix : BC (Bituminous Concrete)
 Date of test : 07-11-17

The results of the tests conducted on the Bituminous Concrete mix sample are as follow				
SLNo	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.52	11.47	10KN(min)
2	Marshal flow at 60°C, mm	3.48	3.53	2-4
3	Percent air Voids	4.82	4.78	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.28	14.26	13-15
5	Percent Voids filled with Bitumen(VFB %)	71.45	71.38	65-75
6	Density, g/cc	2.23	2.24	-

Note:-

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PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS CONCRETE

Lab ID : CP-RW-2017-11-07-01 Date: 10-11-17

Customer : Assistant Executive Engineer, Yelahanka New Town Sub division, BBMP, Bangalore.

Address : Yelahanka New Town Sub division, BBMP, Bangalore.

Project Name : Improvements to roads at Pulakeshinagara in Attur Ward no.03

Agency : Sri. H.S. Palakshamurthy, No.1, 2nd Main, B. D. A layout, Pattegere, Palaya, Near Prashanthanagara, Bangalore.

Customer Reference : EE(YNK.D)E-PMT-04/WO/107/2017-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 07-11-17

Sample ID No : 2017-11-07-01/01

Type of Mix : BC (Bituminous Concrete)

Date of test : 07-11-17

Table 500-16 : Physical Requirements for Coarse Aggregate for Bituminous Concrete

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	11.9	Combined Flakiness & Elongation Index for BC is Maximum 35%	IS:2386 Part I
	Elongation Index	12.2		
Strength	Aggregate Impact Value	23.2	Maximum 24%	IS:2386 Part IV
Specific gravity	Specific gravity	2.64	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.2	Maximum 2%	IS:2386 Part III

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TEST RESULTS OF GRADATION FOR BC IS 2386 (Part 1) 1963 (RA 2007)

Lab ID : CP-RW-2017-11-07-01 Date: 09-11-17
Customer : Assistant Executive Engineer, Yelahanka New Town Sub division, BBMP, Bangalore.
Address : Yelahanka New Town Sub division, BBMP, Bangalore.
Project Name : Improvements to roads at Pulakeshinagara in Attur Ward no.03
Agency : Sri. H.S. Palakshamurthy, No.1, 2nd Main, B. D. A layout, Pattegere, Palaya, Near Prashanthanagara, Bangalore.
Customer Reference : EE(YNK.D)E-PMT-04/WO/107/2017-18
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 07-11-17
Sample ID No : 2017-11-07-01/01
Type of Mix : BC-Plant (Bituminous Concrete)
Date of test : 07-11-17
Oven Dry Weight : 5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-17(grading-2)
19	0	0	0.0	100.0	100
13.2	87	87	1.7	98.3	90-100
9.5	706	793	15.9	84.1	70-88
4.75	891	1684	33.7	66.3	53-71
2.36	593	2277	45.5	54.5	42-58
1.18	502	2779	55.6	44.4	34-48
0.6	492	3271	65.4	34.6	26-38
0.3	537	3808	76.2	23.8	18-28
0.15	448	4256	85.1	14.9	12-20
0.075	343	4599	92.0	8.0	4-10
PAN	401	5000	100	0.0	0

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Certificate No.: TC-5548

DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE (IS 2386 (Part 1) 1963 (RA 2007))

Lab ID : CP-RW-2017-10-30-06 Date: 31-10-17
Customer : Assistant Executive Engineer, Yelahanka New Town Sub division, BBMP, Bangalore.
Address : Yelahanka New Town Sub division, BBMP, Bangalore.
Project Name : Improvements to roads at Pulakeshinagara in Attur Ward no.03
Agency : Sri. H.S. Palakshamurthy, No.1, 2nd Main, B. D. A layout, Pategere, Palaya, Near Prashanthanagara, Bangalore.
Customer Reference : EE(YNK.D)E-PMT-04/WO/107/2017-18
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 30-10-17
Sample ID No : 2017-10-30-06/01
Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test : 30-10-17

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	12.4%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	11.5%	
Combined Flakiness and Elongation Index for WMM	23.9%	

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Certificate No.: TC-5548

TEST REPORT OF AGGREGATE IMPACT VALUE

IS: 2386 Part IV

Lab ID : CP-RW-2017-10-30-06 Date: 31-10-17
 Customer : Assistant Executive Engineer, Yelahanka New Town Sub division, BBMP, Bangalore.
 Address : Yelahanka New Town Sub division, BBMP, Bangalore.
 Project Name : Improvements to roads at Pulakeshinagara in Attur Ward no.03
 Agency : Sri. H.S. Palakshamurthy, No.1, 2nd Main, B. D. A layout, Pattegere, Palaya, Near Prashanthanagara, Bangalore.
 Customer Reference : EE(YNK.D)E-PMT-04/WO/107/2017-18
 Source of Sample : Sample supplied by Agency
 Sample Condition : Satisfactory
 Date of Receipt : 30-10-17
 Sample ID No : 2017-10-30-06/01
 Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)
 Date of test : 30-10-17

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample (passing 12.5 mm and retained on 10mm sieve)	A	302.3	302.3
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	73.6	74.0
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	228.4	227.9
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.3	0.4
5	Aggregate impact value	(B/A)*100	24.3	24.5
6	Aggregate impact value (Mean of two tests)	Percentage	24.4	

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TEST RESULTS OF GRADATION FOR WMM

Lab ID : CP-RW-2017-10-30-06 Date: 31-10-17
 Customer : Assistant Executive Engineer, Yelahanka New Town Sub division, BBMP, Bangalore.
 Address : Yelahanka New Town Sub division, BBMP, Bangalore.
 Project Name : Improvements to roads at Pulakeshinagara in Attur Ward no.03
 Agency : Sri. H.S. Palakshamurthy, No.1, 2nd Main, B. D. A layout, Pattegere, Palaya, Near Prashanthanagara, Bangalore.
 Customer Reference : EE(YNK.D)E-PMT-04/WO/107/2017-18
 Source of Sample : Sample supplied by Agency
 Sample Condition : Satisfactory
 Date of Receipt : 30-10-17
 Sample ID No : 2017-10-30-06/01
 Type of Mix : WMM (Wet Mix Macadam)
 Date of test : 30-10-17
 Oven Dry Weight : 11000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	326	326	3.0	97.0	95-100
22.4	2249	2575	23.4	76.6	60-80
11.2	2379	4954	45.0	55.0	40-60
4.75	2151	7105	64.6	35.4	25-40
2.36	1621	8726	79.3	20.7	15-30
0.6	623	9349	85.0	15.0	8-22
0.075	1338	10687	97.2	2.8	0-5

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CP/TF/01

TEST REPORT ON BITUMEN

Lab ID : CP-2017-10-30-06 Date: 31-10-17
Customer : Assistant Executive Engineer, Yelahanka New Town Sub division, BBMP, Bangalore.
Address : Yelahanka New Town Sub division, BBMP, Bangalore.
Project Name : Improvements to roads at Pulakeshinagara in Attur Ward no.03
Agency : Sri. H.S. Palakshamurthy, No.1, 2nd Main, B. D. A layout, Pattegere, Palaya, Near Prashanthanagara, Bangalore.
Customer's Reference : EE(YNK.D)E-PMT-04/WO/107/2017-18
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 30-10-17
Sample ID No : 2017-10-30-06/01
Sample Type : Bitumen
Reference to BIS codes : IS: 1201-1220(1978) (Reaffirmed-2004)
Date of test : 30-10-17

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73
1	Penetration at 25°C, in 1/10th mm	65.3	60 to 70
2	Softening Point, °C	48.4	Min. 40°C
3	Ductility, cm	96	Min. 75cm
4	Flash point, °C	238	Min. 220°C
	Fire point, °C	246	

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TEST RESULTS OF GRADATION FOR BC IS 2386 (Part 1) 1963 (RA 2011)

Lab ID : CP-RW-2017-11-16-01 Date: 18-11-17
Customer : Assistant Executive Engineer, Yelahanka New Town Sub division, BBMP, Bangalore.
Address : Yelahanka New Town Sub division, BBMP, Bangalore.
Project Name : Improvements to roads at Pulakeshinagara in Attur Ward no.03
Agency : Sri. H.S. Palakshamurthy, No.1, 2nd Main, B. D. A layout, Pattedgere, Palaya, Near Prashanthanagara, Bangalore.
Customer Reference : EE(YNK.D)E-PMT-04/WO/107/2017-18
Source of Sample : Sample supplied by Agency
Date of Receipt : 16-11-17
Sample ID No : 2017-11-16-01/01
Type of Mix : BC (Bituminous Concrete)
Date of test : 16-11-17

SLno	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	501
2	Weight of the sample After extraction	B	477	476
3	Bitumen percentage	$\frac{A-B}{A} \times 100$ A	4.60	4.99
4	Average percentage	%	4.8	

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Lab ID : CP-RW-2017-11-16-01

Date: 18-11-2017

Sample ID : 2017-11-16-01/01

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 477

IS Sieve Size (mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	7	7	1.5	98.5	90-100
9.5	66	73	15.3	84.7	70-88
4.75	134	207	43.4	56.6	53-71
2.36	60	267	56.0	44.0	42-58
1.18	33	300	62.9	37.1	34-48
0.6	25	325	68.1	31.9	26-38
0.3	62	387	81.1	18.9	18-28
0.15	10	397	83.2	16.8	12-20
0.075	59	456	95.6	4.4	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 476

IS Sieve Size (mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	9	9	1.9	98.1	90-100
9.5	74	83	17.4	82.6	70-88
4.75	129	212	44.5	55.5	53-71
2.36	51	263	55.3	44.7	42-58
1.18	39	302	63.4	36.6	34-48
0.6	21	323	67.9	32.1	26-38
0.3	55	378	79.4	20.6	18-28
0.15	32	410	86.1	13.9	12-20
0.075	46	456	95.8	4.2	4-10

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